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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,189	10/10/2001	Andrew Brookfield Swaine	550-275	4494

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EXAMINER

GUYTON, PHILIP A

ART UNIT	PAPER NUMBER
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2113

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/973,189

Applicant(s)

SWAINE ET AL.

Examiner

Philip Guyton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-10 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: reference is made to both external storage 18 and load instruction 18 on page 6, paragraphs 2 and 3 under Description of the Preferred Embodiments. Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 10 is directed to a computer program product, which as claimed is not a process, machine, manufacture, or composition of matter as required by 35 U.S.C. 101. Claim 10 additionally fails to limit the product to being stored on a computer-readable medium and executing in a processor.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1-3, 6, 7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,752,013 to Christensen et al. (Christensen).

With respect to claim 1, Christensen discloses an apparatus for processing data, said apparatus comprising:

a register bank [part of core (figure 1, item 140)] having a plurality of registers and operable to store data words to be processed [inherent that core includes register bank – see U.S. Patent No. 4,733,346 to Tanaka, column 1, lines 36-37 and U.S. Patent No. 5,917,771 to Hill, column 1, lines 9-12];

processing logic operable in response to a multi-word data transfer instruction to transfer a plurality of data words between respective registers within said register bank and respective storage locations within a data memory [superscalar architecture determines which instructions to execute together (column 5, lines 60-67 and column 6, lines 11-16)]; and

tracing logic (figure 1, item 150) triggered by detection of a predetermined trace initiating condition [breakpoint (column 6, lines 27-30)] to commence tracing operation generating a trace data stream of trace data part way through said multi-word data transfer instruction whereby a subset of transfers of said plurality of data words are traced within said trace data stream [instructions in cluster up to breakpoint are executed, after which instructions are debugged (column 2, lines 47-58)].

With respect to claim 2, Christensen discloses wherein all transfers of said multi-word data transfer instruction subsequent to said detection of said predetermined trace

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initiating condition are traced within said trace data stream (column 4, line 67 and column 5, lines 1-15).

With respect to claim 3, Christensen discloses wherein said predetermined trace initiating condition is triggered from a triggering transfer with subsequent transfers giving rise to trace data even though they do not meet said predetermined trace initiating condition (column 5, lines 2-15).

With respect to claim 6, Christensen discloses wherein said trace initiating condition is one or more of:

- a data word transfer using a predetermined register within said register bank;
- a data word transfer using a predetermined memory address within a memory;
- and
- a data word transfer of a data word having a predetermined value (column 1, lines 64-67).

With respect to claim 7, Christensen discloses wherein transfers of data words performed simultaneously by said processing logic and that are to be traced are written sequentially within said trace data stream by said tracing logic [instructions executed sequentially by debugger (figure 2, items 260, 264, 268 column 5, lines 2-15)].

With respect to claim 9, Christensen discloses a method of processing data, said method comprising the steps of:

- storing data words to be processed within a register bank [part of core (figure 1, item 140)] having a plurality of registers [inherent that core includes register bank – see

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U.S. Patent No. 4,733,346 to Tanaka, column 1, lines 36-37 and U.S. Patent No. 5,917,771 to Hill, column 1, lines 9-12];

in response to a multi-word data transfer instruction, transferring a plurality of data words between respective registers within said register bank and respective storage locations within a data memory [superscalar architecture determines which instructions to execute together (column 5, lines 60-67 and column 6, lines 11-16)]; and when triggered by detection of a predetermined trace initiating condition [breakpoint (column 6, lines 27-30)], commencing tracing operation generating a trace data stream of trace data part way through said multi-word data transfer instruction whereby a subset of transfers of said plurality of data words are traced within said trace data stream [instructions in cluster up to breakpoint are executed, after which instructions are debugged (column 2, lines 47-58)].

Claim 10 is a program product for implementing the method of claim 9, and is rejected under the same rationale.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen in view of U.S. Patent 5,222,219 to Stumpf et al. (Stumpf).

Christensen does not disclose expressly wherein said multi-word data transfer instruction specifies a transfer order and said tracing logic writes said transfers that are to be traced in accordance with said transfer order.

Stumpf teaches incorporation of a transfer order in pipelined data write process (abstract).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Christensen by including a transfer order as taught by Stumpf. A person of ordinary skill in the art would have been motivated to do so because Stumpf teaches wherein a multiple write process in a pipeline architecture may not retain the correct transfer order (column 1, lines 35-45). This would have been extremely significant to the invention of Christensen, because a pipeline protocol is used (figure 1, item 110), and it would have been important to preserve write order as taught by Stumpf (column 1, lines 46-55).

Allowable Subject Matter

7. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Double Patenting

8. Applicant is advised that should claim 4 be found allowable, claim 5 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two

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claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Guyton whose telephone number is (571) 272-3807. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PG
7/28/05


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